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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,343	03/04/2002	Ashley G. Price		4010

7590 09/23/2005
Richmond, Hitchcock,
Fish & Dollar
P.O. Box 2443
Bartlesville, OK 74005

EXAMINER

JOHNSON, EDWARD M

ART UNIT PAPER NUMBER

1754

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,343

Applicant(s)

PRICE ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-15 and 17-117 is/are pending in the application.
- 4a) Of the above claim(s) 34-57,65-88 and 96-115 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-15,17-33,58-64,89-95,116 and 117 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All. b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-4, 7-15, 17-18, 21-29, 32-33, 58-64, 89-95, and 116-117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khare et al. US 5,726,117 in view of Khare et al. US 6,184,176.

Regarding claims 1 and 15, Khare '117 discloses a sorbent composition comprising manganese oxide (see column 2, lines 29-35), zinc silicate and/or zinc aluminate (see column 2, lines 50-55 and 63-67), nickel oxide (see column 3, lines 45-50) as oxide or elemental form (see column 4, lines 6-10).

Khare '117 fails to disclose the composition reduced with a reducing agent.

Khare '176 discloses reducing the composition with a reducing agent (see column 3, lines 10-15).

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It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the reducing of the composition with a reducing agent, as in Khare '176, to the desulfurization sorbent of Khare '117 because Khare '176 discloses the reducing with a reducing agent in the production of a sulfur sorbent (title) so as to produce a sorbent composition having a substantial zero valence sufficient to permit the removal of sulfur from a cracked gasoline or diesel fuel stream; and, also notably to one of ordinary skill, both disclosures made in patents to the same named inventor.

Regarding claims 3, 7-12, 16-17, and 21-29 Khare '117 discloses 5-10% nickel and/or cobalt oxide (see column 3, lines 45-46 and 51-54), and 15-60% zinc oxide or silicate (see column 2, lines 51-52 and 60-61) and 5-15% silica and/or alumina (see column 2, lines 35-44).

Regarding claims 4, 18, 58-64, and 89-95, Khare '117 discloses 1-30% manganese oxide (see column 2, lines 33 and 37-40)

Regarding claims 13-14 and 32-33, Khare '117 discloses extrudates (see Example 1) and colloidal particles of 10-10,000 angstroms (see column 2, lines 10-15).

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Regarding claims 116-117, Khare '176 discloses reducing at 100-1500 degrees Fahrenheit, 15-1500 psia, for a time sufficient to achieve the desired reduction (see column 9, lines 19-26)..

3. Claims 1, 3-15, 17-29, 32-33, 58-64, 89-95, and 116-117 are rejected under 35 U.S.C. 102(b) as being anticipated by Moskovitz et al. US 5,948,726 in view of Khare '176.

Regarding claims 1 and 15, Moskovitz '726 discloses a sorbent composition comprising alumina and oxides of manganese, zinc, nickel, and/or cobalt (see column 13, lines 27-35) with binder that comprises silica (see claims 1 and 4).

Moskovitz '726 fails to disclose the composition reduced with a reducing agent.

Khare '176 discloses reducing the composition with a reducing agent (see column 3, lines 10-15).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the reducing of the composition with a reducing agent, as in Khare '176, to the desulfurization sorbent of Moskovitz '726 because Khare '176 discloses the reducing with a reducing agent in the production of a sulfur sorbent (title) so as to produce a sorbent composition having a substantial zero valence sufficient to permit the removal of suflfur from a cracked gasoline or diesel fuel stream.

Regarding claims 3, 7-12, 17, 21-29, Moskovitz '726 discloses 1-90% oxides of nickel, cobalt, and/or zinc (see 13, lines 27-35 and claim 30) and 20 parts alumina and silica (see column 12, lines 55-65).

Regarding claims 4-6, 18-20, 58-64, and 89-95, Moskovitz '726 discloses up to 50% manganese oxide (see Table 2).

Regarding claims 13-14 and 32-33, Moskovitz '726 discloses extruding, spheres, pellets, and a particle size of 5-250 microns (see column 10, lines 20-22 and 43-48).

4. Claims 1, 3-4, 7-15, 17-18, 21-23, 27-29, 32-33, 58-64, 89-95, and 116-117 are rejected under 35 U.S.C. 102(b) as being anticipated by Thakur et al. US 5,134,108 in view of Khare '176.

Regarding claims 1 and 15, Thakur '108 discloses a catalyst comprising a combination of oxides of manganese, nickel, and zinc (see abstract) in different valence states (see column 4, lines 18-20) silica, and alumina (see column 1, lines 24-27).

Thakur '108 fails to disclose the composition reduced with a reducing agent.

Khare '176 discloses reducing the composition with a reducing agent (see column 3, lines 10-15).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the reducing of the composition with a reducing agent, as

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in Khare '176, to the desulfurization sorbent of Thakur '108 because Khare '176 discloses the reducing with a reducing agent in the production of a sulfur sorbent (title) so as to produce a sorbent composition having a substantial zero valence sufficient to permit the removal of sulfur from a cracked gasoline or diesel fuel stream; and, also notably to one of ordinary skill, both disclosures made in patents to the same named inventor.

Regarding claims 4, 7-12, 18, 21-23, 27-29, 58-64, and 89-95, Thakur '108 discloses 3-10% manganese oxide and up to 15% oxides of manganese, nickel, cobalt, and/or zinc oxide (see column 3, lines 15-24 and paragraph bridging columns 4-5) in solution (see claim 1).

Regarding claims 13-14 and 32-33, Thakur '108 discloses pellets (see column 10, lines 40-43) and 16-20 micron diameter particles (see abstract).

Regarding claims 116-117, Khare '176 discloses reducing at 100-1500 degrees Fahrenheit, 15-1500 psia, for a time sufficient to achieve the desired reduction (see column 9, lines 19-26).

5. Claims 1, 3-15, 17-33, 58-64, 89-95, and 116-117 are rejected under 35 U.S.C. 102(b) as being anticipated by Schlaefer et al. US 4,078,004 in view Khare '176.

Regarding claims 1 and 15, Schlaefer '004 discloses a composition comprising crushed perlite and iron or cobalt

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molybdate (see abstract and column 1, lines 58-63) wherein the perlite comprises silica, alumina, and manganese oxide (see column 2, lines 53-60), all at stable valence states.

Schlaefer '004 fails to disclose reducing with a reducing agent.

Khare '176 discloses reducing the composition with a reducing agent (see column 3, lines 10-15).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the reducing of the composition with a reducing agent, as in Khare '176, to the desulfurization sorbent of Schlaefer '004 because Khare '176 discloses the reducing with a reducing agent in the production of a sulfur sorbent (title) so as to produce a sorbent composition having a substantial zero valence sufficient to permit the removal of sulfur from a cracked gasoline or diesel fuel stream.

Regarding claims 3, 7-12, 17, 21-23, and 27-29, Schlaefer '004 discloses 0.01 to 20 percent of Zn and/or Co (see column 5, lines 3-4) and 0-20% nickel (see column 5, line 15).

Regarding claims 4-6, 18-20, 58-64, and 89-95, Schlaefer '004 discloses 1-50% manganese oxide (see column 5, line 14).

Regarding claims 13-14 and 32-33, Schlaefer '004 discloses extruding (see Example 8) spheres (see column 3, lines 33-38),

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and up to 25% with a diameter of less than 10,000 angstroms (see Example 11).

Regarding claims 24-26, Schlaefer '004 discloses 0-50% Si (see column 4, lines 33 and 46).

Regarding claims 30-31, Schlaefer '004 discloses expanded and crushed/fragmented perlite (see abstract and column 3, lines 12-38).

Regarding claims 116-117, Khare '176 discloses reducing at 100-1500 degrees Fahrenheit, 15-1500 psia, for a time sufficient to achieve the desired reduction (see column 9, lines 19-26).

Response to Arguments

6. Applicant's arguments filed 8/31/05 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman

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can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-0987.



Edward M. Johnson
Primary Examiner
Art Unit 1754

EMJ